

REMARKS/ARGUMENTS

Overview

The present application includes claims 1-5 and 7-26.

Claim Rejections under 35 U.S.C. 103

The Examiner rejected claims 1-5, 7-17, and 19-26 under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,667,660 to Eingorn ("Eingorn") in view of US Patent 6,638,295 to Schroer ("Schroer").

The rejected claims include independent claims 1, 5, 17, 20, and 26 from which the remaining claims depend. As stated herein, the Applicants submit that the Examiner has not provided a prima facie case of obviousness for any of the independent claims. Further, the combination of references is not proper. A listing of at least some of the deficiencies of the Examiner's prima facie case are provided below along with a listing of some of the reasons while the combination of the references is not proper.

Applicants respectfully request the Examiner provide how the proposed combination of Eingorn and Schroer satisfies each of the below enumerated points or allow the claims. In the case of an Advisory Action (as opposed to a Notice of Allowance), Applicants request the Examiner to address each rejected claim individually so that it is easier for the Board of Appeals to follow the arguments of both the Applicants and the Examiner in the briefing for appeal.

Claim 1

- The claimed invention includes a "device coupled to two links of the link system to orient the two links of the link system relative to each other, the device having an unrelaxed state when the link system is exerting the force on the head which causes the link system to simultaneously adapt to changes in the geometry of the head without manual intervention" The Examiner does not explicitly state what components of Eingorn or Schroer correspond to the device. As such, Applicants submit that the Examiner has not set forth a prima facie case.
- Two additional arguments are presented below in case the Examiner meant that springs 190 of Eingorn correspond to the device or that spring 25 of Schroer corresponds to the device.
 - The springs 190 of Eingorn do not correspond to the claimed "device."

- First, each of springs 190 are contained within a pin 25 (identified by the Examiner as a constraint) and are not coupled to two links of the link system.
- Second, each of springs 190 do not cause the link system of Eingorn to simultaneously adapt to changes in the geometry of the head without manual intervention. The link system of Eingorn is rigid and requires manual intervention to adjust.¹
 - On page 4 of the Office Action (in a paragraph seemingly not related to claim 1 due to a discussion of a compliant member comprising a compliant link) the Examiner discusses replacing the main support member 12 of Eingorn with the arms and hinge (including spring 25), as taught by Schroer. The reason given by the Examiner is "to allow easier adjustment of the device for different size heads." One of ordinary skill in the art would not be so motivated. Eingorn already provides for the adjustment of tong assembly 10 to account for different sizes of heads through hanger 34, the sliding adjustment of brackets 36 and 68 (when loosened) and the rotatable adjustment of straps 18, 20, 22, and 24 (when loosened). (Eingorn, col. 9, lns. 6-12)
- Further, the replacement of the rigid support member 12 of Eingorn with the arms and hinge, as taught by Schroer, would render tong assembly 10 unsatisfactory for its intended purpose of use with other traction equipment assembled to hanger 34.
- Claim 1 recites "a first plurality of constraints rigidly coupled to a first link of the link system and adapted to engage the left half of the head of the person."² The Examiner points to pins 25 of Eingorn for an example constraint. Applicants submit that pins 25 are not the same as the claimed constraints. The claimed constraints are both rigidly coupled to a first link of the link system and engage the head of the

¹ Eingorn is clear that the link system therein is only moveable during that application phase to locate the pins and is rigid thereafter unless there is manual intervention. ("the strap 20 is rigidly mounted to the coupler body 80 at the ear 92. The bolt 126 may be loosened to disengage the slots 104 and teeth 105 from the slots 120 and teeth 122, and the strap 20 may then be rotated relative to the main support member 12 into a desired position before the bolt 126 is tightened." Eingorn, col. 6, 55-61)

² A similar recitation is made for a second plurality of constraints which engage the right half of the head.

person. In Fig. 2 of Eingorn, pin head 186 which engages the head of the wearer is an end of a pin 184 which is moveably coupled to a shaft 112 during use of the cervical traction tong assembly 10. Such movement is contrary to the recitation of "rigidly coupled" in claim 1. By way of example, the specification describes the concept of rigidly coupled in relation to the constraints as follows in numbered paragraph [0054].

It is further preferred that each pin or constraint 110, 112 be rigidly coupled to the link system 106 such that each pin or constraint 110, 112 does not move relative to link system 106 during the time head restraint member 102 is assembled to head 10. ... In another example, each pin or constraint 110, 112 is moveably coupled to link system 106 during the application of head restraint member 102 to head 10 and rigidly coupled to link system 106 such that the pin or constraint 110, 112 does not move relative to link system 106 once head restraint member 102 is applied to head 10. (emphasis added).

As indicated in the above-passages the concept of rigidly coupled means that the "constraint ... does not move relative to link system ... during the time head restraint member 102 is assembled to head 10." Pins 25 of Eingorn include a portion, namely pin 184, which moves relative to strap 20, the link in the Examiner's rejection. Therefore, constraints 25 are not rigidly coupled to the link system, but rather include a component which is moveable relative to the link system.

- Eingorn teaches away from the combination with Schroer.
 - First, in the background of Eingorn, several tong devices are described. Some of these devices result in a pivot line due to the use of a two pin tong as pictured in Schroer. One looking to the description of Eingorn would be lead to a system similar to Trippi due to its positive treatment in the background and resemblance to the device of Eingorn, as opposed to another two pin tong device as pictured Schroer.
 - Second, Eingorn has a fixed support and moveable pins while Schroer has the opposite, a moveable support and fixed applicators.
 - Third, it should be noted that both systems already include a method for adjusting for different sized heads. (Eingorn, col. 9, lns. 6-12) Therefore,

one of ordinary skill would not look to Schroer for the reason stated by the Examiner because Eingorn already addresses this need in a manner to maintain the rigid structure of Eingorn.

For at least these reasons, Applicant submits that independent claim 1 is in condition for allowance either because the Examiner has not provided a prima facie case of obviousness or because the invention of claim 1 is patentable over Eingorn, alone or in combination with Schroer.

Claims 3, 4, 8-11, 23, and 24 depend from independent claim 1 and are believed to be in condition for allowance at least for the reasons given above in connection with claim 1, and for the further limitations of claims 3, 4, 8-11, 23, and 24. Such action is respectfully requested.

Claim 5

- The Examiner identifies in the rejection strap 24 as the claimed fourth link. Claim 5 states that "the fourth link is a compliant link and is configured to provide a sufficient amount of force to engage the first plurality of constraints and the second plurality of constraints with the head of the person." However, the Examiner, does not discuss how strap 24 is a compliant link. Further, the references to Schroer on page 4 of the Office Action, speak to replacing support member 12 with the arms and hinge of Schroer. The replacing of support member 12 does not explain at all how strap 24 is a compliant link. Let alone how strap 24 "is configured to provide a sufficient amount of force to engage the first plurality of constraints and the second plurality of constraints with the head of the person." (emphasis added)
- The claimed invention further recites that the link system is "configured to simultaneously adapt to changes in the geometry of the head without manual intervention such that the head remains generally fixed over a period of time." The Examiner relies on Eingorn for the teaching of the link system. The link system of Eingorn remains fixed. It is the constraints of Eingorn which may move over time.
- The claimed link system has four identified links wherein "the first link is coupled to the third link at a first joint, the first joint configured to constrain the first link to move in a single degree of freedom relative to the third link and the second link is coupled to the fourth link at a second joint, the second joint configured to constrain the second link to move in a single degree of freedom relative to the fourth link, the

fourth link is a compliant link and is configured to provide a sufficient amount of force to engage the first plurality of constraints and the second plurality of constraints with the head of the person." Remembering that it is the link system that adapts to changes in the head over time, Eingorn is clear that the link system therein is only moveable during that application phase to locate the pins and is rigid thereafter unless there is manual intervention. (See - "the strap 20 is rigidly mounted to the coupler body 80 at the ear 92. The bolt 126 may be loosened to disengage the slots 104 and teeth 105 from the slots 120 and teeth 122, and the strap 20 may then be rotated relative to the main support member 12 into a desired position before the bolt 126 is tightened." Eingorn, col. 6, 55-61)

- Further, the replacement of the rigid support member 12 of Eingorn with the arms and hinge, as taught by Schroer, would render tong assembly 10 unsatisfactory for its intended purpose of use with other traction equipment assembled to hanger 34.
- Claim 5 recites "a first plurality of constraints rigidly coupled to a first link of the link system and adapted to engage the left half of the head of the person."³ The Examiner points to pins 25 of Eingorn for an example constraint. Applicants submit that pins 25 are not the same as the claimed constraints. The claimed constraints are both rigidly coupled to a first link of the link system and engage the head of the person. In Fig. 2 of Eingorn, pin head 186 which engages the head of the wearer is an end of a pin 184 which is moveably coupled to a shaft 112 during use of the cervical traction tong assembly 10. Such movement is contrary to the recitation of "rigidly coupled" in claim 1. By way of example, the specification describes the concept of rigidly coupled in relation to the constraints as follows in numbered paragraph [0054].

It is further preferred that each pin or constraint 110, 112 be rigidly coupled to the link system 106 such that each pin or constraint 110, 112 does not move relative to link system 106 during the time head restraint member 102 is assembled to head 10. ... In another example, each pin or constraint 110, 112 is moveably coupled to link system 106 during the application of head restraint member 102 to head 10 and rigidly coupled to link system 106 such that the pin or constraint 110, 112 does not move relative to link system

³ A similar recitation is made for a second plurality of constraints which engage the right half of the head.

106 once head restraint member 102 is applied to head 10.
(emphasis added).

As indicated in the above-passage the concept of rigidly coupled means that the "constraint ... does not move relative to link system ... during the time head restraint member 102 is assembled to head 10." Pins 25 of Eingorn include a portion, namely pin 184, which moves relative to strap 20, the link in the Examiner's rejection. Therefore, constraints 25 are not rigidly coupled to the link system, but rather include a component which is moveable relative to the link system.

- Eingorn teaches away from the combination with Schroer.
 - First, in the background of Eingorn, several tong devices are described. Some of these devices result in a pivot line due to the use of a two pin tong as pictured in Schroer. One looking to the description of Eingorn would be lead to a system similar to Trippi due to its positive treatment in the background and resemblance to the device of Eingorn, as opposed to another two pin tong device as pictured Schroer.
 - Second, Eingorn has a fixed support and moveable pins while Schroer has the opposite, a moveable support and fixed applicators.
 - Third, it should be noted that both systems already include a method for adjusting for different sized heads. (Eingorn, col. 9, lns. 6-12) Therefore, one of ordinary skill would not look to Schroer for the reason stated by the Examiner because Eingorn already addresses this need in a manner to maintain the rigid structure of Eingorn.

For at least these reasons, Applicant submits that independent claim 5 is in condition for allowance either because the Examiner has not provided a prima facie case of obviousness or because the invention of claim 5 is patentable over Eingorn, alone or in combination with Schroer.

Claim 7 depend from independent claim 5 and are believed to be in condition for allowance at least for the reasons given above in connection with claim 5, and for the further limitations of claim 7. Such action is respectfully requested.

Claim 17

- Claim 17 recites "a device coupled to the third link and the fourth link, the device including a force actuator and a compliant member, wherein the force actuator is configured to load each of the first plurality of constraints and each of the second plurality of constraints simultaneously such that each of the first plurality of constraints and each of the second plurality of constraints engages the head with generally the same amount force...." The Examiner points to springs 190 of Eingorn as force applicators.⁴ However, springs 190 do not meet the requirement of claim 17 that the force actuator both (1) loads each of the constraints simultaneously and (2) that the loading results in each constraint engaging the head with generally the same amount of force. Each of springs 190 influences only one of pins 184, not each of the pins. Further, each of pins 184 may be loaded differently. Springs 190 act to limit the maximum load. (Eingorn, col. 7, lns. 55-62)
- Regarding the compliant member, claim 17 recites "wherein the first joint, the second joint, and the third joint permit the relative movement of the first link, the second link, the third link, and the fourth link over a period of time, and wherein the compliant member is configured to alter the orientation of the first link, the second link, the third link, and the fourth link to automatically adapt to changes in the geometry of the head without manual intervention such that the head remains generally fixed over the period of time." The Examiner identifies in the rejection straps 18, 20, 22, and 24 as the four identified links and joints 126, 126 (mirror), and 128 connecting each. The Examiner further states on page 4 of the Office Action that he is relying on the arms and hinge of Schroer for the compliant member by the replacement of support member 12.
 - The proposed replacement of support member 12 with the arms and hinge of Schroer does not address the claim limitation that "the compliant member is configured to alter the orientation of the first link, the second link, the third link, and the fourth link to automatically adapt to changes in the geometry of the head without manual intervention such that the head

⁴ The Examiner states on page 4 of the Office Action a reliance on Schroer for the compliant member, not the force actuator.

remains generally fixed over the period of time." If support member 12 is replaced with the arms and hinge of Schroer, joints 126 and 128 still remain fixed over time and do not change the relative orientation of their respective links over time due to the compliant member without the manual loosening of the joints.⁵

- Further, the replacement of the rigid support member 12 of Eingorn with the arms and hinge, as taught by Schroer, would render tong assembly 10 unsatisfactory for its intended purpose of use with other traction equipment assembled to hanger 34.
- Eingorn teaches away from the combination with Schroer.
 - First, in the background of Eingorn, several tong devices are described. Some of these devices result in a pivot line due to the use of a two pin tong as pictured in Schroer. One looking to the description of Eingorn would be lead to a system similar to Trippi due to its positive treatment in the background and resemblance to the device of Eingorn, as opposed to another two pin tong device as pictured Schroer.
 - Second, Eingorn has a fixed support and moveable pins while Schroer has the opposite, a moveable support and fixed applicators.
 - Third, it should be noted that both systems already include a method for adjusting for different sized heads. (Eingorn, col. 9, lns. 6-12) Therefore, one of ordinary skill would not look to Schroer for the reason stated by the Examiner because Eingorn already addresses this need in a manner to maintain the rigid structure of Eingorn.

For at least these reasons, Applicant submits that independent claim 17 is in condition for allowance either because the Examiner has not provided a prima facie case of obviousness or because the invention of claim 17 is patentable over Eingorn, alone or in combination with Schroer.

⁵ Claim 17 states " first joint, the second joint, and the third joint permit the relative movement of the first link, the second link, the third link, and the fourth link over a period of time." It is the link system that adapts to changes in the head over time, Eingorn is clear that the link system therein is only moveable during that application phase to locate the pins and is rigid thereafter unless there is manual intervention. ("the strap 20 is rigidly mounted to the coupler body 80 at the ear 92. The bolt 126 may be loosened to disengage the slots 104 and teeth 105 from the slots 120 and teeth 122, and the strap 20 may then be rotated relative to the main support member 12 into a desired position before the bolt 126 is tightened." Eingorn, col. 6, 55-61)

Claims 18 and 19 depend from claim 17 and are believed to be in condition for allowance at least for the reasons given above in connection with claim 17, and for the further limitations of claims 18 and 19. Such action is respectfully requested.

Claim 20

- The replacement of the rigid support member 12 of Eingorn with the arms and hinge, as taught by Schroer, would render tong assembly 10 unsatisfactory for its intended purpose of use with other traction equipment assembled to hanger 34.
- Eingorn teaches away from the combination with Schroer.
 - First, in the background of Eingorn, several tong devices are described. Some of these devices result in a pivot line due to the use of a two pin tong as pictured in Schroer. One looking to the description of Eingorn would be lead to a system similar to Trippi due to its positive treatment in the background and resemblance to the device of Eingorn, as opposed to another two pin tong device as pictured Schroer.
 - Second, Eingorn has a fixed support and moveable pins while Schroer has the opposite, a moveable support and fixed applicators.
 - Third, it should be noted that both systems already include a method for adjusting for different sized heads. (Eingorn, col. 9, lns. 6-12) Therefore, one of ordinary skill would not look to Schroer for the reason stated by the Examiner because Eingorn already addresses this need in a manner to maintain the rigid structure of Eingorn.

For at least these reasons, Applicant submits that independent claim 20 is in condition for allowance either because the Examiner has not provided a prima facie case of obviousness or because the invention of claim 20 is patentable over Eingorn, alone or in combination with Schroer.

Claims 21 and 22 depend from claim 20 and are believed to be in condition for allowance at least for the reasons given above in connection with claim 20, and for the further limitations of claims 21 and 22. Such action is respectfully requested.

Claim 26

- Claim 26 includes a limitation written in means-plus-function format under 35 USC §112, paragraph 6. Applicants submit that the Examiner has not provided a prima

facia case. According to section 2181 of MPEP "the 'broadest reasonable interpretation' that an examiner may give means-plus-function language is that statutorily mandated in paragraph six. Accordingly, the PTO may not disregard the structure disclosed in the specification corresponding to such language when rendering a patentability determination." According to §2182 of the MPEP, in examining a means-plus-function limitation, "[t]he first step in construing a means-plus-function claim limitation is to define the particular function of the claim limitation ... [and the] next step in construing a means-plus-function claim limitation is to look to the specification and identify the corresponding structure for that function. " The Examiner did not identify the function for the "means for simultaneously adapting ..." limitation of claim 26 nor did he identify the corresponding structure in the specification for that function.

- Further, the Examiner did not identify how the structure of Eingorn in combination with Schroer is equivalent to the disclosed structure. As stated in §2183 of the MPEP, in making a prima facie case of equivalence under 35 USC §112, paragraph 6 the Examiner must find that a prior art element "(A) performs the function specified in the claim, (B) is not excluded by any explicit definition provided in the specification for an equivalent, and (C) is an equivalent of the means- (or step-) plus-function limitation." In addition, the Examiner "should provide an explanation and rationale in the Office action as to why the prior art element is an equivalent." The Examiner did not perform this analysis in the Office Action.
- Claim 26 recites "a first plurality of constraints rigidly coupled to a first link of the link system and adapted to engage the left half of the head of the person."⁶ The Examiner points to pins 25 of Eingorn for an example constraint. Applicants submit that pins 25 are not the same as the claimed constraints. The claimed constraints are both rigidly coupled to a first link of the link system and engage the head of the person. In Fig. 2 of Eingorn, pin head 186 which engages the head of the wearer is an end of a pin 184 which is moveably coupled to a shaft 112 during use of the cervical traction tong assembly 10. Such movement is contrary to the recitation of "rigidly coupled" in claim 1. By way of example, the specification describes the

⁶ A similar recitation is made for a second plurality of constraints which engage the right half of the head.

concept of rigidly coupled in relation to the constraints as follows in numbered paragraph [0054].

It is further preferred that each pin or constraint 110, 112 be rigidly coupled to the link system 106 such that each pin or constraint 110, 112 does not move relative to link system 106 during the time head restraint member 102 is assembled to head 10. ... In another example, each pin or constraint 110, 112 is moveably coupled to link system 106 during the application of head restraint member 102 to head 10 and rigidly coupled to link system 106 such that the pin or constraint 110, 112 does not move relative to link system 106 once head restraint member 102 is applied to head 10. (emphasis added).

As indicated in the above-passages the concept of rigidly coupled means that the "constraint ... does not move relative to link system ... during the time head restraint member 102 is assembled to head 10." Pins 25 of Eingorn include a portion, namely pin 184, which moves relative to strap 20, the link in the Examiner's rejection. Therefore, constraints 25 are not rigidly coupled to the link system, but rather include a component which is moveable relative to the link system.

- Eingorn teaches away from the combination with Schroer.
 - First, in the background of Eingorn, several tong devices are described. Some of these devices result in a pivot line due to the use of a two pin tong as pictured in Schroer. One looking to the description of Eingorn would be lead to a system similar to Trippi due to its positive treatment in the background and resemblance to the device of Eingorn, as opposed to another two pin tong device as pictured Schroer.
 - Second, Eingorn has a fixed support and moveable pins while Schroer has the opposite, a moveable support and fixed applicators.
 - Third, it should be noted that both systems already include a method for adjusting for different sized heads. (Eingorn, col. 9, lns. 6-12) Therefore, one of ordinary skill would not look to Schroer for the reason stated by the Examiner because Eingorn already addresses this need in a manner to maintain the rigid structure of Eingorn.

- The replacement of the rigid support member 12 of Eingorn with the arms and hinge, as taught by Schroer, would render tong assembly 10 unsatisfactory for its intended purpose of use with other traction equipment assembled to hanger 34.

For at least these reasons, Applicant submits that independent claim 26 is in condition for allowance either because the Examiner has not provided a prima facie case of obviousness or because the invention of claim 26 is patentable over Eingorn, alone or in combination with Schroer.

Final Remarks

Claims 1-5 and 7-26 are believed to be in condition for allowance. Such allowance is respectfully requested.

Once again, Applicants respectfully request the Examiner provide how the proposed combination of Eingorn and Schroer satisfies each of the above enumerated points or allow the claims. In the case of an Advisory Action (as opposed to a Notice of Allowance), Applicants request the Examiner to address each rejected claim individually so that it is easier for the Board of Appeals to follow the arguments of both the Applicants and the Examiner in the briefing for appeal.

If necessary, please consider this a Petition for Extension of Time to effect a timely response. Please charge any additional fees or credits to the account of Baker & Daniels Deposit Account No. 02-0390.

In the event that there are any questions related to these arguments or to the application in general, the undersigned would appreciate the opportunity to address those questions directly in a telephone interview to expedite the prosecution of this application for all concerned.

Respectfully submitted,

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